ORIGINAL RESEARCH PAPER

Geography

SUSTAINABLE AGRICULTURAL LANDUSE PLANNING A CASE STUDY OF CHITTORGARH DISTRICT RAJASTHAN

KEY WORDS:

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ABSTRACT

Sustainable agriculture means to sustain / maintain the agriculture production and productivity of the agricultural land in the coming years so that the human population may not face the hunger problem or deficit in food grains. This paper describes the main features of sustainable agricultural land use planning, along with impacts of landuse and landcover pattern on the agriculture in the district of Chittorgarh, state of Rajasthan.

Introduction:-

According to the Brundtland Commission "sustainable development is a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional changes are all in harmony and enhance both current and future potential, to meet human needs and aspiration". Land cover is the physical material at the surface of the earth. Land covers include grass, asphalt, trees, bare ground, water, etc. Land use is a description of how people utilize the land and socio-economic activity - urban and agricultural land uses are two of the most commonly known land use classes. To meet future challenges of food security, further development of agriculture is necessary. The economy of Chittorgarh district is agro based and the majority of the working population of the district, derives its livelihood from agriculture.

The study area has many historical and religious places which are having their own importance. The Chittorgarh is the eleventh largest district in area in Rajasthan. The district is located between the latitudes 23ş32' and 15ş13' north and between the longitudes 74ş12' and 75ş49' east in the south-east of Rajasthan state. The rivers which flow through the district are chambal, Banas, Berach and Jakham while Wagan, Gambhiri, Bamani (Brahman) and lunjali are their tributaries. The average annual rainfall in the district is 852.1 mm. The rainfall in the district generally decreases from the south - east towards the north - west. The mean daily maximum temperature during this month is 25.2°C and the mean daily minimum is 7.8° C. The district's temperate climate makes its north west and central plains in the Gangrar, Rashmi, Chittorgarh and Kapasan Tehsils particularly well suited to agriculture condition very markedly in different parts of the district having different types of soil texture and other facilities like availability of water. The soils of the district fall under the broad categories of yellowish-brown soils of foot hills, red loam soils, black soils and lithososis and regososis of hills.

Objectives

- To study the land use and landcover classification/pattern, capability and land use planning.
- To assess the impact of land use and landcover for sustainable agricultural planning.
- To assess the possibility of sustainable development of agriculture.

Methodology

The secondary data have been obtained from various departments, block headquarters. The data from District Census & Statistical Hand Book, Annual plans for the Districts have been used.

Table: Changing landuse pattern in Chittorgarh

S.No	Classification of the land use	1988-89 (Area in hectares)	1988-89 (% to total area)	2003-04 (Area in hectares)	2003-04 (% to total area)
1.	Forests	148213	14.31	1,94,743	18.80
2.	Land put to non-agricultural use	40290	3.89	48,835	4.71
3.	Barren and uncultivated land	151217	14.60	92,669	8.95
4.	Other uncultivated land excluding fallow land	79648	7.69	85,838	8.29
5.	Culturable waste	207354	20.02	1,54,482	14.92
6.	Fallow land	49404	4.77	48,055	4.64
7.	Net area sown	359607	34.72	4,11,082	39.69
	Total :	10,35,733	100	10,35,704	100

(Source : Statistical Abstract, Rajasthan 1989-2004)

Result & Discussion

The study region presents a variety of land use patterns which exhibit, to a large extent, the availability of social and water resources in the area and the human endeavours to harness them. Total reporting area of the district during 1988-89 was 10,35,733 hectares for the land utilization purposes. And during 2003-04 it was 10,35,704 hectares. The classification of the land use in the district during 1988-89 and 2003-04 was as under :-

The general land use pattern of the region under study differs from tahsil to tahsil due to the locality and physical condition. The existing pattern of land use is shown in the above table. There is change in physiography, soil types, rainfall and geology all these factors played important role in determining the agricultural practices. The production level of crops is decreasing year by year in Chittorgarh district. During the year 2002-03 the productivity is very less in the comparison of the year 1999-2000. But during 2003-04 the productivity became very high the main reason is that in the year 2004 the rainfall was about 970 mm which is 200 mm more than the average rainfall. The production of sugar cane is decreasing day by day. In the year 1999-2000 it was 45 tonnes per hectare whereas during 2003-04 it was 14 tonnes per hectare.

The traditional outlook of the cultivators of the district as well as their backward and superstitions customs and manners, coupled with their depressed economic condition, have precluded any large scale changes in the agricultural practices and implements used in the district. However, the state agricultural department has been trying to popularise the use of mechanical methods and better implements by demonstrating their use as well as by

arranging their distribution through Panchayat samities. The grant of agricultural loans for buying implement etc. has also provided certain amount of encouragement for their use. Harrows and cultivators, seed drills, threshers, chaff cutters, sprayers and dusters have also been coming into increased use in the district.

Conclusion

The land use pattern in the study area is being changed. General land use from 1988-89 to 2003-04 was transferred use of land from one category to other categories due to the natural factors as well as man made affords. The forest area has been increased about 4.5 percent. Barren and uncultivated land decreasing year by year and agricultural land is increasing. The net area sown was 34.72 percent during 1988-89 while during 2003-04 it has been increased upto 39.69 percent due to modernization in agricultural techniques as well as awareness among the cultivators through various Govt. programs etc.

+The agricultural productivity can be sustained by adopting and using of dry land farming, drip irrigation and sprinkle irrigation, we can increase/maintain agriculture production and we can sustain the agriculture production despite deficiency or low ground water table. Government should motivate the cultivators more, to use of latest & developed techniques for the cultivation of crop. Land classification should be well planned and local soil testing centres should be established. In majority of villages of the district the maximum number of cultivators are poor who cannot afford the use of expensive fertilizers. So to solve this problem the crop diversification techniques should be implemented.

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